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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,926	12/10/2001	Rajeev Krishnamurthi	PA010121	5845

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QUALCOMM, INC
5775 MOREHOUSE DR.
SAN DIEGO, CA 92121

EXAMINER

AHMED, SALMAN

ART UNIT	PAPER NUMBER
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2666

DATE MAILED: 11/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/015,926

Applicant(s)

KRISHNAMURTHI ET AL.

Examiner

Salman Ahmed

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/10/2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-66 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8, 10-13, 15-20, 22, 23, 25-46, 50-52 and 54-66 is/are rejected.
- 7) ☒ Claim(s) 4, 9, 14, 21, 24, 47-49 and 53 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/10/2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1, 2, 5, 6, 7, 8, 10, 28, 30, 32, 33, 34, 35, 36, 37, 38, 59, 60 are rejected under 35 U.S.C. 102(e) as being anticipated by Numminen et al. (US PAT 6687499), hereinafter referred to as Numminen.

In regards to claim 1, 2, 5, 6, 7, 8, 10, 28, 30, 32, 33, 34, 35, 36, 37, 38, 59, 60 a memory (column 7 line 27, memory media) communicatively coupled to a digital signal processing device (DSPD) (column 7 line 26, a microprocessor) capable of interpreting digital information to: receive a first message having included therein test settings for

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one or more channels (column 7 lines 18-20, test mode means that the mobile station to be tested is instructed to maintain a connection on a certain transmission channel) comprising traffic channels, auxiliary channels, (column 11 lines 4-6, data, traffic and control channels) or a combination thereof (column 7 lines 46-47, at first the test equipment sends a comparison and statistical operation start command associated with the data channel); configure the one or more channels based on the test settings in the first message (column 7 lines 59-61, The mobile station closes, i.e. activates, the test loop); receive test packets via a forward traffic channel (column 8 lines 4-7, once the G loop has been activated the test equipment can start sending test data); transmit loop back packets via a reverse traffic channel (column 8 lines 39-40, the test equipment receives the uplink frames sent by the mobile station), and transmit signaling data via traffic or one or more auxiliary channels is anticipated by (column 11 lines 4-6) applicability of the invention to all mobile communication systems in which a mobile station can operate on data, traffic and control channels.

In regards to claim 30, 59, updating a plurality of variables based on the parameter values included in the second data transmission is anticipated by (column 10 lines 46-49) the quality control station of a cellular radio network may collect statistical data sent by mobile stations and received by base stations from different parts of the cellular radio network.

In regards to claim 3, Numminen teaches of a CDMA system (column 4 line 28).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 11, 12, 13, 15, 16, 17, 18, 19, 20, 22, 23, 25, 26, 27, 29, 31, 39, 45, 50-52, 54, 55, 61, 62, 63, 65, 67, 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Numminen, in view of Kobayasi et al. (US PAT 6333932), hereinafter referred to as Kobayasi, in view of Ikeda (US PAT 5636212).

In regards to claims 29, 31, 39, 45, 63, 67, 68 Numminen teaches a method for testing one or more channels in a wireless data communication system, comprising:

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receiving a plurality of test packets via a forward traffic channel as described in the rejections of claims 1, 5, 6, 28 above.

In regards to claim 29, 31, 39, 63, 67, 68 Numminen does not explicitly teach identifying a transmission source and a sequence number of each received test packet; forming a plurality of loop back packets for the plurality of received test packets, wherein each loop back packet covers zero or more test packets and includes the transmission source and the sequence number of each covered test packet; and transmitting the loop back packets. In regards to claim 45, Numminen does not explicitly teach selecting rates for the test packets based on a rate selection scheme, and transmitting the test packets at the selected rates on the traffic channel. In regards to claims 11, 12, 13, 15, 16, 17, 18, 19, 20, 22, 23, 25, 26, 27, 50-52, 54, 55, Numminen does not explicitly teach of having protocol type, packet type, number of records field, time interval, source address, sequence number in the test packet. In regards to claim 58, 62, 65 Numminen does not explicitly teach a queue for the test packets.

In regards to claim 29, 31, 39, 63, 67, 68 Kobayasi teaches, (column 2 lines 55-67) a test being started by issuing a test connectionless packet transmission request message (test start request) from the OS center 1 to SW station 3. The request message contains an identification information ID indicating terminal SW station 6. SW station 3 generates a test packet with the identification address of terminal SW station 6 set as its destination address DA and the identification address of its home station (SW station 3) set as its source address SA. The test packet is output to terminal SW station

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6. In SW stations 4 and 5, test packets are processed as normal packets and transferred to terminal SW station 6. On receipt of the test packet, terminal SW station 6 outputs the packet with its DA and SA inverted. That is, the packet is returned from terminal SW station 6 to SW station 3, and it is reported to the OS center 1 upon re-arrival of the packet at the source SW station 3. Kobayasi further teaches the L2-PDU shown in FIG. 783 is an example of a BOM cell. The 2 bytes preceded by the header field stores a segment type ST, sequence number SN, and message identifier MID (or a multiplex identifier). The sequence number SN is a serial number assigned to a transferred cell for convenience in detecting the cell if it is lost or mistakenly inserted. In regards to claim 45 Kobayasi teaches (column 97 lines 45-46) Loopback of a test cell is done in a 156 Mbps cell highway. In regards to claims 11, 12, 15, 16, 17, 18, 19, 22, 23, 25, 26, 27, 50, 51, 54, 55, Kobayasi discloses protocol type, packet type, number of records field, time interval, source address, sequence number in the packets shown in FIGS. 582 through 628. In regards to claims 13, 20, 52 Kobayasi teaches (column 3 lines 5-10) that since the source SW station 3 and the terminal SW station 6 mark the time stamp onto the payload field of the packet, the OS center 1 is informed of the transmission time of packets according to the information. In regards to claim 58, 62, 65 Kobayasi teaches buffers (fig 132) for data packets.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Numminen's teaching by incorporating the loopback test scheme as taught by Kobayasi. The motivation is that (as suggested by Kobayasi column 317 lines 29-34) the present invention realizes an efficient test within a short

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time by performing a test cell loopback check, which has been made in a test device, through a test program in the switch. Additionally, transmitting cell data from a test device requires no testing units because the loopback jig can replace the testing units. Further motivation (as suggested by Numminen, column 11 lines 5-8) is that the invention can also be modified in many ways without departing from the scope of the invention defined by the claims.

In regards to claims 46, 57, Numminen in view of Kobayasi, teaches a loopback scheme as described in the rejections of claims 29, 31, 39, 45, 63, 67, 68 above.

In regards to claims 46, 57 Numminen in view of Kobayasi does not explicitly teach message having maximum and minimum rate for rate selection.

In regards to claims 46, 57 Ikeda teaches (column 8 lines 38-39) reservation request being issued with a maximum band-width and a minimum band-width.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Numminen in view of Kobayasi's teaching by incorporating the concept of sending maximum band-width and a minimum band-width via message as taught by Ikeda. The motivation is that (as suggested by Ikeda, column 2 lines 5-10) to provide a flexible method of reserving a band-width for a burst capable of flexibly reserving a band-width according to a maximum band-width and a minimum band-width requested for reservation

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In regards to claim 31, Numminen teaches updating a plurality of variables based on the transmission source and sequence number of each packets included in the second data transmission (column 10 lines 46-49, the quality control station of a cellular radio network may collect statistical data sent by mobile stations and received by base stations from different parts of the cellular radio network).

In regards to claim 39, 56 Numminen teaches a memory (column 7 line 27, memory media) communicatively coupled to a digital signal processing device (DSPD) (column 7 line 26, a microprocessor).

In regards to claims 61, 67 Numminen teaches a receive data processor (figure 3 element 304), a transmit data processor (figure 3 element 310) and a controller (figure 3 element 307).

6. Claims 40-43, 44, 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Numminen, in view of Oommen et al. (US PAT 6799203).

In regards to claims 40, 41, 42, 43 Numminen teaches collecting data for a first parameter while in a first operating state (column 7 lines 46-59, at first the test equipment sends a comparison and statistical operation start command associated with the data channel, which command can be called CLOSE_Multi-slot_loop_CMD. The close command may include an identifier on the basis of which the mobile station identifies the G loop. The mobile station acknowledges the message using an acknowledge message which can be called CLOSE_Multi-slot_loop_ACK. The mobile

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station closes, i.e. activates, the test loop in a certain time after it has sent the acknowledge. . Numminen teaches collecting a second statistic for a second parameter while in a second operating state (column 8 lines 4-6, once the G loop has been activated the test equipment can start sending test data, i.e. periods of a pseudorandom bit sequence packed in downlink frames). Numminen teaches receiving a first message requesting the first or second statistic, and sending a second message with the requested first or second statistic (column 8 lines 29-39, while the G loop is active the mobile station compares the received bit sequence portions to the locally produced portions and measures e.g. the bit error ratio or frame erasure ratio and compiles statistics of the measurement results in a desired manner. Complete statistics or information elements representing the reception error status in general are sent uplink to the test equipment).

In regards to claim 40, 41, 42, 43 Numminen does not explicitly teach, collecting statistics during each of the transactions.

In regards to claim 40, 41, 42, 43 Oommen teaches (column 2 lines 46-49) OTAMD involves requesting statistics and performing diagnostic tests in the MS using a command issued from the network for testing purpose.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Numminen's teaching by incorporating the statistic gathering during transactions as taught by Oommen. The motivation is that (as taught by Oommen, column 1 lines 14-15) a fast and efficient method for activating and

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managing a MS over the air would be beneficial both for the user and the wireless service provider.

In regards to claim 66 Numminen in view of Oommen teaches loopback test scheme using maximum and minimum rate as described above.

In regards to claim 66 Numminen in view of Oommen does not explicitly teach test packets having transmission source and a sequence number.

In regards to claim 66 Kobayasi teaches, (column 2 lines 55-67) a test being started by issuing a test connectionless packet transmission request message (test start request) from the OS center 1 to SW station 3. The request message contains an identification information ID indicating terminal SW station 6. SW station 3 generates a test packet with the identification address of terminal SW station 6 set as its destination address DA and the identification address of its home station (SW station 3) set as its source address SA. The test packet is output to terminal SW station 6. In SW stations 4 and 5, test packets are processed as normal packets and transferred to terminal SW station 6. On receipt of the test packet, terminal SW station 6 outputs the packet with its DA and SA inverted. That is, the packet is returned from terminal SW station 6 to SW station 3, and it is reported to the OS center 1 upon re-arrival of the packet at the source SW station 3. Kobayasi further teaches the L2-PDU shown in FIG. 783 is an example of a BOM cell. The 2 bytes preceded by the header field stores a segment type ST, sequence number SN, and message identifier MID (or a multiplex identifier). The sequence number SN is a serial number assigned to a transferred cell for convenience in detecting the cell if it is lost or mistakenly inserted.

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Numminen in view of Oommen's teaching by incorporating the loopback test scheme as taught by Kobayasi. The motivation is that (as suggested by Kobayasi column 317 lines 29-34) the present invention realizes an efficient test within a short time by performing a test cell loopback check, which has been made in a test device, through a test program in the switch. Additionally, transmitting cell data from a test device requires no testing units because the loopback jig can replace the testing units. Further motivation (as suggested by Numminen, column 11 lines 5-8) is that the invention can also be modified in many ways without departing from the scope of the invention defined by the claims.

In regards to claim 44, Numminen teaches a memory (column 7 line 27, memory media) communicatively coupled to a digital signal processing device (DSPD) (column 7 line 26, a microprocessor).

In regards to claim 64 Numminen teaches a receive data processor (figure 3 element 304), a transmit data processor (figure 3 element 310) and a controller (figure 3 element 307).

Allowable Subject Matter

7. Claims 4, 9, 14, 21, 24, 47, 48, 49, 53 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

8. Prior art pertinent to the application but not used in office action:

- US 20020009134 A1 US-PGPUBMethod and apparatus for testing wireless communication channels Fischel, Scott Eduard et al.
- US 20010023186 A1 US-PGPUBSystem and method for base station initiated call setup Krishnamurthi, Rajeev et al.
- US 6542538 B2 USPATMethod and apparatus for testing wireless communication channelsFischel; Scott Eduard et al.
- US 6088588 A USPATMethod and wireless terminal for monitoring communications and providing network with terminal operation information Osborne; Greg
- US 5802105 A USPATMethod and apparatus for testing a digital communication channelTiedemann, Jr.; Edward G. et al.
- US 6782503 B1 USPATGenerating a signature to add to a test packet to achieve a target check value Dawson; John E.
- US 6069876 A USPATPerformance monitoring of an ATM Network Lander; Emil et al.
- US 6791949 B1 USPATNetwork protocol for wireless ad hoc networks Ryu; Bong K. et al.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Salman Ahmed whose telephone number is (571)272-8307. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571)272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Salman Ahmed
Examiner
Art Unit 2666

SA



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